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BUREAU OF PLANT INDUSTRY

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THE PLANT DISEASE REPORTER

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THE OFFICE OF MYCOLOGY AND DISEASE SURVEY

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PEACH YELLOWS IN GEORGIA

What appears to be the first authentic report of the occurrence of peach yellows in Georgia is given in the following statement from M. B. Waite, of the Office of Fruit Diseases, Bureau of Plant Industry.

> "Dr. Lee M. Hutchins recently sent us some specimens of true peach yellows collected by him on the farm of Mr. Cornwall at Alto, Georgia, July 21, 1927. These show the bushy wiry slender growth, in fact resulting witches' broom, characteristic of the peach yellows. The specimens are so perfectly typical and so well developed that there is little doubt but this is true peach yellows. In this connection I may say that the writer found a number of well marked cases of peach yellows at Tryon, North Carolina, in June, 1889. The Tryon specimens showed the premature red-spotted fruit, the slender wiry growth, and the yellow foliage, in fact all the symptoms of peach yellows. The disease has been moving slowly down the Appalachian Mountain region and probably has only recently reached the commercial orchard districts of north Georgia. We are practically certain that the disease was in the same orchard last year for Mr. Cornwall personally brought some premature red peaches to Mr. Hutchins at Fort Valley last year, his suspicions evidently being aroused. The fruit characters were not quite typical. Mr. Hutchins described them as being "very highly colored but not red spotted, and there was no undue red coloration in the flesh." It is not unusual, however, for peach yellows cases in Michigan to show exactly these same fruit symptoms. So far as I know this is the first definite determination of peach yellows in the state of Georgia.
>
> "The samples have been photographed and pressed as herbarium specimens and will be placed in the Pathological Collections."

POWDERY MILDEW ON PEACH IN WASHINGTON

"The Horticultural Office at Yakima reports an unusual prevalence of this disease on peaches. This is in evidence on both fruit and foliage, but because of the very light crop of fruit is not causing much immediate loss." (Heald, Aug. 1)

ADDITIONAL REPORTS ON APPLE SCAB

Massachusetts: Three orchardists tell me that the scab is damaging their trees and fruit more than they have ever seen before. These growers have not used the spray schedule as suggested by the College believing proper cultivation produces trees resistant to scab. (Davis, July 27)

New York (Ulster Co.): Some new infections of scab are showing up on the new growth particularly where dust is being used. Most growers will have more scab by picking time than they think now as they are unaware of the tiny spots now showing up on the fruit. (A. M. Boyce, New York State Col. Agr. Dept. Plant Path. & Entom. Weekly News Letter, Aug. 1)

Virginia:

Virginia: There is scab all around northern Virginia but in Frederick County there will be only a slight infection this year. (Schneiderhan, July 31)

West Virginia: Generally prevalent but I do not think that it has caused any serious injury except in any isolated orchards which were not given good care. (Giddings, Aug. 3)

Montana: In Bitter Root Valley, scab very serious in unsprayed orchards. In some cases causing partial defoliation. Good control where lime sulfur 28° Baumé 1-25 was used in pink and calyx. Fair control only where pink spray was omitted. Very light set of fruit due to cold, wet spring, poor pollination. (H. E. Morris, July 15)

SOOTY MOLD (FUMAGO VAGANS) ON APPLE IN CONNECTICUT

"Because of the unusual abundance of lice on all sorts of plants, this mold, developing in the "honey-dew", has become very conspicuous on leaves, etc. of such plants. Stoddard reports that some growers have found it so conspicuous on their apples that they fear it will spoil the sale of the fruit unless washed off by rains. Some growers are contemplating spraying just to see if this will facilitate the washing off by killing the mold." (Clinton, Aug. 1)

NEMATODE (TYLENCHUS DIPSACI) ON STRAWBERRY AND NARCISSUS IN OREGON

"The leaf and stem nematode disease was found causing unusually heavy damage on a small patch of strawberries near Yachats, Lincoln County, Oregon. Fully 80 per cent of the plants were severely affected and some were next to totally destroyed giving no crop whatever. The evidence indicates that infection came from surrounding wild strawberry plants. These wild strawberry plants nearby and for a considerable distance away were freely affected by the disease. This patch is in a location where we more often find this disease prevalent and serious, namely within a quarter of a mile of the ocean beach." (McKay, July 15)

"This disease was found in three narcissus plantings causing minor losses. The reason this disease is so nearly under control on this host is that the hot water treatment has been demonstrated to be so successful and all planting stocks known to be infected or exposed to infection were treated before replanting." (McKay, July 15)

PECAN SCAB IN SOUTHERN GEORGIA

"There occurred very little infection on leaves or nuts this year until break of the drought about June 10. Since that time, we have had several infection periods, resulting in a rapid increase in infection of the nuts. As a whole, July has been favorable for infection. Although the disease was late in starting, it promises to reduce the crop from 20 to 50 per cent in Schley and Alley, and even more in Dolmas. Orchards that are being properly sprayed or dusted will undergo only slight loss." (Boyd, Aug. 1)

DISEASES OF MULBERRY

The Survey has received specimens of *Bacterium mori* on *Morus* sp. from Wedgworth in Mississippi and of *Phleospora moricola* on *M. rubra* from Ludwig in South Carolina. In both cases these seem to be new reports for the state concerned.

DESTRUCTIVE OUTBREAK OF UNKNOWN POTATO DISEASE IN UTAH

By B. L. Richards, H. L. Blood, and M. B. Linford

A peculiar disease, resembling somewhat "witches broom" as described by Hungerford and Dana (Phytopath. 14: 372-383), is affecting the Utah potato crop. The early crop has suffered severe losses amounting in many instances to complete failure, and the late crop is not free from the disease. Attention was first called to this trouble in Davis County as early as June 12 when the disease was far advanced and some fields showed practically 100 per cent infection.

Subsequent survey has shown the disease to be general in the early potato areas of the state, and at the time of writing it has been found in a number of localities in the late crop. Some indication of its prevalence may be seen in the following table. The figures represent actual counts and include clean as well as diseased fields when they occurred in the areas surveyed. (Observations up to July 22, 1927).

County	Number of fields examined	Fields infested		Heaviest infestation (per cent)	Average infestation (per cent
		Number	Per cent		
Weber	7	7	100	95	62
Davis	26	26	100	100	52
Salt Lake	19	8	42	100	9
Millard	18	9	50	97	23
Total	70	50	71	100	34

The severity of losses may be judged by the fact that affected plants produce few if any marketable tubers. In early fields and early planted home gardens where the disease has been found in maximum severity the crop is a total failure. Many large growers are not getting marketable tubers equal in quantity to the seed planted, and the best yields in the early potato sections are far below normal.

When first observed this disease appeared to be closely limited to the early crop. It occurred in the most severe form only in the earliest planted fields, and adjoining late-sown fields appeared relatively clean. Subsequent observation has shown, however, that it is developing in the late crop in the same and other localities as the season advances. In the late crop the infestation is generally less heavy and injury appears somewhat less severe, but the full importance of the disease cannot be estimated until later in the season. Besides the counties listed in the above tabulation, the late crop has been found infested in Cache and Boxelder Counties, and the early crop has been reported to be a total failure, probably as a result of this disease, in Washington County at the extreme south end of the state.

The present outbreak of this disease appears to be in no way associated with the source of seed potatoes. Seed from diverse sources, including the best certified seed from the Middle West, and local grown seed of known pedigree, has developed the disease equally when planted side by side on the same date. Tuber-indexed stock is no exception. It is thus apparent that some disseminating agent has been especially active this season, particularly in the early spring, but that it is still present less abundantly.

Early in the field study of this disease, an undetermined psyllid was found closely associated with affected plants. In numerous fields of early potatoes in the infested area, diseased plants were found nearly always to bear some of the nymphs or their casts, while adjoining healthy plants were almost entirely free from them. This observation was checked repeatedly in different localities. Still more significant, however, has been the corresponding observation in localities where the disease occurs only sparingly in late crop potatoes. Here the affected plants almost invariably bear the insect, but the psyllid can very rarely be found on a plant not showing symptoms of the disease. This observation, together with the fact that the psyllid has not been detected on potatoes in Utah in former years in the absence of this disease, constitutes strong observational evidence that this is the active disseminator of the disease.

This disease, as it occurs in Utah this summer, has much in common with the witches' broom of Hungerford and Dana and may be found to be identical with it. The differences, however, are considerable and are probably greater than could be attributed to different environmental conditions. The abundant and widespread transmission at so early a date is astounding and the spindling sprout and excessive numbers of sprouts from the seed pieces are almost entirely absent, indicating that the outbreak is not to be attributed to seed-borne infection. In early potatoes the disease has shown the aerial symptoms described as resulting from current season infection of witches' broom but in very aggravated form. In the late crop the symptoms are in closer agreement with the description. The effect of the disease on tuber formation is various, but has not, in the early crop, been to increase the numbers of tubers appreciably. Frequently, on the contrary, plants affected early set but few if any tubers. The development of vegetative shoots from stolons, the development of second growth on small tubers, and the formation of leafy shoots from the eyes of partly grown tubers, are all characteristic symptoms of this disease.

If this disease proves to be the witches' broom, then the undetermined species of psyllid referred to here appears to be a very active disseminating agent of that disease. Experiments are now in progress at the Utah Experiment Station to test this relationship.

VIRUS DISEASES OF POTATO

Ohio: Leaf roll prevalent in fields from uncertified seed. (P. E. Tilford, Aug. 1)

Iowa: In Polk County, mosaic is quite general, but the damage is undoubtedly slight. It is common on Early Ohio and Irish Cobbler causing considerable stunting and dwarfing. Mottling, however, is not common. (Archer, Aug. 1

Utah: Mosaic, particularly rugose mosaic, is still one of the most destructive diseases of the potato in Utah. By the use of certified seed potatoes or other potatoes of known freedom the more progressive growers are avoiding it very effectively, but in fields planted from common commercial potatoes or, in some instances, from potatoes said to be "just as good as certified", infestations between 20 and 50 per cent are frequently found. Home garden potatoes frequently show between 50 and 90 per cent. (Linford, July 26)

Oregon: Mild mosaic is common in our potato stocks. Its effects on the appearance of the plant and the yield are not so striking as in the case of some of the other virus diseases, so it rather commonly passes unnoticed. Rugose mosaic is apparently becoming more prevalent each year. Under some conditions it spreads quite rapidly. It is now more commonly encountered than any other of our potato virus diseases. As a general thing effective use is not made of the control methods available to use against it. Leaf roll is a serious factor as usual in eastern Oregon, rarely encountered in western Oregon. Luck is a bigger element in avoiding damage from it than are conscious efforts to control it by well known means. (McKay, July 15)

RHIZOCTONIA ON POTATO

North Dakota: Occurring in many fields. Not severe according to reports. (Brentzel, Aug. 1)

Colorado (Montrose district): Probably 10 per cent light infection. Not yet doing appreciable damage. (H. G. MacMillan)

Utah: In the opinion of B. L. Richards this disease is more destructive this season than for several years past. Under one set of conditions in Millard County it has proved especially severe. This is in the alfalfa seed producing area, a region of alkaline soils, where potatoes are planted chiefly on some of the lighter soils after a crop of alfalfa has been turned under or after heavy applications of manure. Of seven fields examined in this locality, five were seriously infested, and the seven showed an average of 22 per cent of the plants affected with deep stem cankers and damaged stolon tips. In a nearby locality where the crop is grown under different soil and cultural conditions this disease was very minor. (Linford, July 26)

Oregon: This disease is common as usual causing more loss than any other of our diseases caused by known parasites. The worst case seen showed nearly 90 per cent of the sprouts badly cankered. This crop was grown on land that had only a two-year rotation. A rotation of four years or longer is quite effective in reducing losses. (McKay, July 15)

ADDITIONAL REPORTS ON POTATO LATE BLIGHT

Maine: First case of the season in Aroostook County is specimen with stem-girdling lesion about halfway up the shoot, found by Dr. E. S. Schultz. (Folsom, Aug. 1)

New York: In addition to a report on late blight in Nassau County about two weeks ago, this disease has been found in up-state New York in the following places:

Arkport, Steuben County, July 30
Fulton, Oswego County, August 1
Nichols, Tioga County, August 2

As the blight has appeared so early this year, it seems reasonable to suppose that we may have considerable loss before the end of the season should weather conditions at all favorable for it prevail throughout August or September. (Barrus, Aug. 9)

(Reports from New York State Col. Agr. Dept. Pl. Path. & Entom. Weekly News Letter)

Orange Co.: Beginning to show up. (W. E. Blauvelt, Aug. 1)

Nassau Co.: Found in 70 per cent of the fields visited during the early part of the week in the vicinities of Hicksville and Syosset. Its presence in fields where copper-lime dust had been used equally as noticeable. Cool, windy weather, however, has checked its growth during the last few days. Green Mountains in the Glen Head area apparently have little or no blight in them. (E. J. Hambleton, Aug. 8)

West Virginia: Has been held in check to a considerable extent by hot, dry weather. (Giddings, Aug. 3)

EARLY BLIGHT OF POTATO (ALTERNARIA SOLANI)

Connecticut: This trouble is more common on potatoes than usual. (Clinton, Aug. 1)

OTHER POTATO DISEASES

"Blackleg (Bacillus phytophthorus) has been encountered a few times in Oregon, seldom attacking over 3 to 4 per cent of the plants. In some cases the occurrence of the disease would be easily understood if the seed-corn maggot were known to be a factor influencing spread as has been demonstrated in Minnesota, but no one has had the opportunity of determining conditions accurately here." (McKay, July 15). Blackleg has been reported from a number of other states, but in most cases damage is said to be slight.

"Hopperburn is quite common throughout Iowa, and undoubtedly results in considerable loss. In 2 counties, Muscatine and Story, the loss is estimated at 20 per cent. In general growers attribute the damage to excessive drought, but experimental plots in the potato section sprayed with Bordeaux are practically free, while neighboring fields belonging to private growers are badly injured." (Archer, Aug. 1)

"Fusarium wilt is very severe in early potatoes in Colorado, causing about 98 per cent loss. Most prevalent in the vicinity of Grand Junction. "(LeClerg, Aug. 1).

"Common scab (Actinomyces scabies) is prevalent in the early crop potatoes being harvested in Davis County, Utah, infecting up to 90 per cent of the tubers in some fields." (Linford, July 26).

WESTERN YELLOW BLIGHT (CURLY-TOP) OF TOMATO AND CURLY-TOP OF OTHER PLANTS

In a recent note in Science (Aug. 5, pp. 137-138) H. H. P. Severin gives a list of crop plants which have been found to be naturally infected with curly-top in California, including garden, sugar, and stock beets, Swiss chard, spinach, common and Lima beans, Blackeye pea, alfalfa, pumpkin, squash, watermelon, cucumber, muskmelon, potato, radish, tomato, pepper, horse-radish, cabbage, turnip, and parsley. The identity of the virus with that of sugar-beet curly-top was established through inoculation of healthy sugar beets by non-infective leafhoppers allowed to feed on diseased plants. Curly-top was transmitted to sugar beets from tomatoes affected with western yellow blight and also from tomatoes showing symptoms of mosaic only.

Following are some reports concerning yellow blight and curly-top.

Tomato:

New Mexico: Some of the tomato fields in the Mesilla Valley are entirely destroyed. (Crawford, July 18) Specimen accompanying report determined in the Bureau of Plant Industry as yellow blight.

Washington: Tomato yellow blight is showing up in considerable amounts in some fields. It did not appear as early as last season, probably owing to the more humid conditions. (F. D. Heald, August 1.)

Oregon: First reported from Freewater and Hermiston about June 15. At Hermiston one variety is practically entirely diseased whereas another variety alongside is still standing up and looking well. Infection experiments are being run to determine if this variety is really resistant or if it is merely escaping infection. No disease has been noted in western Oregon whereas last year from 50 to 100 per cent infection was not uncommon in some localities. On the whole disease is very much less serious than last year. (M. B. McKay, July 15.)

Other hosts:

Oregon: Curly-top of squash has been reported from only one location, namely Hermiston. It has nearly destroyed one variety as only four good plants remain in a three-acre patch planted with seed from an outside point. Another patch nearby planted from local seed is still growing well. The disease is evidently not seed-carried as in a test with seed saved from diseased plants last year all the plants grown are healthy. (M. B. McKay, July 15.)

Curly-top of bean has appeared again in the curly-top section of Central and Eastern Oregon but not in the region west of the Cascade Mountains. At Hermiston one variety out of three planted in the same field is nearly totally destroyed whereas the other two, one a pole and the other a bush bean, still grow normally. A number of selections or varieties are unusually resistant. Apparently resistant selections will solve this problem in a short time. (M. B. McKay, July 15.)

BACTERIAL CANKER OF TOMATO FOUND IN ANOTHER NEW STATE

The discovery of bacterial canker in Georgia was reported in previous issues of this Reporter (June 1, p. 20, and July 15, p. 74). Another new state, namely, Utah, is now added to the list of those in which the

disease occurs. The identification of the disease was verified by Miss Mary K. Bryan of the Bureau of Plant Industry from specimens sent her by Linford. Linford's report is as follows:

> "A disease which agrees in general symptomology with bacterial canker or 'Grand Rapids disease' is of widespread occurrence in the more important tomato producing areas of the state. Up to the present it has been found in Boxelder, Davis, Weber, Salt Lake and Utah counties. Tomatoes were examined in several fields in Millard County without finding it. No careful survey of tomatoes has yet been made, but several fields have been seen in which this disease has infected from 2 to 60 per cent of the plants. One planting of one and one-half acres in Davis County had suffered a loss of 20 per cent of the plants before June 30, and many other plants were nearly dead."(M. B. Linford, July 26.)

The finding of this disease in these two states, both outside of the previously known range, indicatesthat it is probably much more widespread than is realized. It should be watched for in other localities, and specimens and reports sent either to Miss Bryan or to the Plant Disease Survey.

Other reports of its occurrence this year have been received from Massachusetts and Connecticut,in greenhouses in both cases.

OTHER TOMATO DISEASES

"Leaf mold (Cladosporium fulvum) was found in two fields in Georgia this year. The disease is common in greenhouses but this is the first year it has been observed in the open. " (Boyd, Aug. 1). "It is present in practically every greenhouse in Wisconsin, but not usually serious where strict attention is given to watering and ventilation. Where bed space has been too large for available help losses have been sustained. " (Vaughan, Aug. 1.)

"Mosaic is very abundant throughout tomato-growing sections of New Jersey." (W. H. Martin, Aug. 1.)

"Rootknot nematodes have caused considerable damage in a number of greenhouses near Milwaukee, Wisconsin. Steam sterilization as done last summer was not sufficient to destroy soil infestation." (Vaughan, Aug. 1.)

TOBACCO MOSAIC

New York (Chemung County): Seven tobacco farms inspected July 28. Fourteen and 25 per cent of mosaic respectively in 2 farms, slight to moderate amount in one other. (H. E. Thomas, July 28)

Virginia: Reported to be unusually prevalent from several sections of the State. Evidence that overwintered suckers have been an important factor in the early incidence of the disease obtained in several instances. The mild winter failed to kill the suckers in some sections and they continued growth in the spring. (Fromme, Aug. 1)

North Carolina: Few tobacco fields entirely free this season, while many show a relatively high percentage of infection. Observations made this year indicate that plants affected early in the season, as evidenced by visible infection of all leaves, are much stunted, while the stunting is less pronounced where only the upper leaves become involved. Mature mosaic-infected leaves, are much smaller than mature healthy ones. To all appearances mosaic not only reduces quality but the yield in pounds per acre. (G. W. Fant, July 30.)

OTHER DISEASES OF VEGETABLE AND FIELD CROPS

Sugar beet dry-rot canker (Corticium vagum) in Idaho: "This disease was observed for the first time this year in a twenty-acre field of beets at Clifton, where it was prevalent in an area of about one acre. These beets were suffering from drought to an extent which prevented a fair estimate of the importance of the disease. Symptoms agree fully with those described and illustrated by Richards."(C. M. Tompkins, July 23.)

Pea mosaic in Utah: "Occurs widely in this state but rarely affects more than a fraction of one per cent of plants in any field. In one home garden it was observed affecting 95 per cent of the plants. Its importance in the state as a whole is negligible." (M. B. Linford, July26)

Sweet potato stem-rot (Fusarium spp.) in New Jersey: "Generally distributed, some fields showing 20 per cent infection. In a variety and strain test one lot of certified Yellow Jerseys shows only 2 per cent. The same strain, grown by another grower for 3 years, shows 10 per cent. White Yam shows no infection. (W. H. Martin, Aug. 1.)

MOSAIC OF VARIOUS HOSTS IN CONNECTICUT

"There is more mosaic showing in tobacco, tomatoes, summer squash, cucumbers, and muskmelons than for several years at least. Lice have been

unusually prevalent on all kinds of plants. There is indication that the spread has been introduced in several fields by insects from supposedly mosaic perennial weeds of which Asclepias syriaca is the most suspicious. Mosaic has been found on Zinnias and Calendulas exposed to infected plants in a greenhouse." (G. P. Clinton, Aug. 1)

ADDITIONAL REPORTS ON STINKING SMUT OF WHEAT

Delaware: Infection noticeable June 8. Late seeding shows heavy infection. Some fields show infection ranging from trace up to 54 per cent. Seed treatments have shown excellent control. Treatment of seed by machines has shown consistently better results than by shovel method. (Adams, July 15.)

North Carolina: During the past spring a survey was made to determine the prevalence of bunt in the wheat-producing section of the state. Of a total of 16 fields examined, bunt was found in all, with the exception of two fields planted to treated wheat. The extent of infection as determined ranged from less than one to 30 per cent, with an estimated average loss of 4 per cent for all fields examined. From all accounts the past season, taken as a whole, was an average one from the standpoint of smut occurrence. (G. W. Fant, July 30.)

Utah: The few fields of irrigated wheat that have been examined at a late enough stage for the detection of this disease have been almost entirely free from it, but dry-farm wheat, particularly in Cache and Boxelder counties, is badly smutted. (see accompanying table.). The average smut infestation in the 108 fields examined to date is 1.3 per cent of heads. In Cache County alone the average infestation is 3.4 per cent of heads.

Both the smut fungi, Tilletia tritici and T. levis, occurred in these fields. To determine the relative prevalence of each, samples of smutted heads were collected from 32 fields, and several heads from each sample, usually ten, were examined microscopically. T. tritici occurred in 23 of these, and T. levis also in 23. In samples from 15 fields both occurred together. Samples from 2 of the 3 fields which contained the highest percentages of smut contained predominantly T. tritici. The two fungi appear to be of almost equal importance in this state.

Covered Smut of Dry-Farm Wheat in Utah
Observations up to July 22, 1927.
(M. B. Linford, July 27.)

County	Number fields examined	Fields infested with smut: Number	Fields infested with smut: Per Cent	Fields with more than a trace of smut: Number	Fields with more than a trace of smut: Per Cent	Heaviest infestation (per cent)
Cache	28	26	93	19	68	23
Boxelder	49	32	65	17	35	37
Utah	5	3	60	1	20	3.5
Juab	15	4	27	0	0	trace
Millard	11	1	9	0	0	trace
Total	108	66	61	37	34	37

STEM RUST OF CEREALS

West Virginia: There was very little stem rust of wheat. (N. J. Giddings, Aug. 3.)

Wisconsin: Considerable stem rust on oats and wheat, a small amount on barley and practically none on rye. (R. E. Vaughan, Aug. 1.)

Minnesota: Winter wheat escaped with practically no damage. In certain localities in the southern part of the state, the injury to spring wheat has been the greatest since 1916. There is considerable rust in the Red River Valley, but it is still too early to tell how great the injury will be. At Morris, on the experimental plots, there was 5 per cent infection on Marquis July 15. On August 1, the infection was 75 per cent, but the rust appeared too late in this region to do much damage. On oats infection unusually heavy. (Sect. Pl. Path. Aug. 1)

North Dakota: Stem rust may be found in almost all fields of common wheat. The durum varieties also have considerable rust in certain sections. Infections of 30 to 40 per cent in common wheat have been reported from a few points. Generally the infection amounts to only a trace at this time. (W. E. Brentzel, Aug. 1.)

Montana: Very light infection. Early maturing wheat will escape injury. Too early to predict effect on late seeded grain. (H. E. Morris, July 15.)

Utah: Dry-farm wheat in this state is entirely free. Up to the present only a single pustule of this rust has been observed in irrigated wheat, this in Millard County on July 19, but irrigated wheat has not yet been surveyed with thoroughness in most localities. (M.B.Linford, July26).

LEAF RUST OF CEREALS

West Virginia: There was very little leaf rust of wheat. (N. J. Giddings, Aug. 3.)

Wisconsin: Leaf rusts are bad on oats and wheat, less on barley and little on rye. (R. E. Vaughan, Aug. 1.)

Minnesota: There has been an unusually heavy epidemic of leaf rust on both spring and winter wheat throughout the state. Plants were practically defoliated and the heads ripened earlier. Heaviest general epidemic of crown rust of oats that has been observed in many years. More leaf rust on barley than usual. (Sect. Pl. Path., Aug. 1.)

North Dakota: Leaf rust has been very severe on spring wheat. Many of the more resistant varieties especially in the durum class have developed flecks. These have attracted the attention of many growers. (W. E. Brentzel, Aug. 1.)

Utah: The earliest observation was on June 29 when a single field of irrigated wheat was found lightly infested in Weber County. Since that date it has been observed several times in very light infestation in irrigated wheat, but not at all in dry farm wheat. (M. B. Linford, July 26.)

BARLEY DISEASES IN UTAH

Bacterial blight (Bacterium translucens) found for the first time in State. "This disease, hitherto not reported from Utah, has been found in 3 fields in 3 different counties, Cache, Boxelder, and Weber. It was observed first in a field of late sown barley on very light soil, affecting plants throughout 90 per cent of the area of the small field (1 1/2 acres). The plants which were not affected were heading out nicely, but few heads were forming in the infested area. In the second field, barley in the milk stage bore bacterial lesions on the leaves up to the second from the head. Here the reduction in numbers of heads and the weakening of plants led to injury estimated at 30 per cent of the crop. In the other field injury was estimated at 4 per cent.

"Stripe (Helminthosporium gramineum) is the one outstanding disease of barley in Utah. Of the fields examined, 35 per cent were infested. The highest percentage of affected plants were counted in a small field grown from seed said to have been brought directly from Colorado. This field contained 51 per cent of the disease. The largest single loss from the disease occurred in an 80 acre field in which 25 per cent of the plants were affected severely. The average infestation in the 37 fields examined to date is 6 per cent of plants.

"Covered Smut (Ustilago hordei) has been found in 32 per cent of the barley fields yet examined, showing an average of 0.8 per cent smutted heads in all fields examined. Only two fields have been found with more than 2.5 per cent, and those two contained 5 and 15 per cent of smutted heads. (M. B. Linford, July 26.)

BROWN SPOT OF CORN IN SOUTHERN GEORGIA

"This disease (Physoderma zeae-maydis) is general throughout the Coastal Plain this summer, but not so destructive as last year. It was first observed in Thomas County June 8, and has developed rapidly since that time. It is most damaging on the later plantings which are in the silk stage. The older plantings are now mature. (O. C. Boyd, Aug. 1.)

BACTERIUM TRIFOLIORUM ON RED CLOVER IN IOWA

"In the northern part of the state a number of fields are infected rather severely with Bacterial Spot. The infection was observed as early as May. At present the infection is causing a blighting of the stems and leaves in many fields. (W. A. Archer, Aug. 1.)

SOME DISEASES OF GRASSES

Smut (Tilletia anthoxanthi) on Anthoxanthum odoratum. Specimen collected July 21, near Whitneyville, Connecticut, by Zundel and Clinton. "Extremely rare."

Bacterium coronafaciens atropurpureum on quack grass. "This disease was reported for the first time in Iowa by Dr. C. S. Reddy. He found infected plants near Osage." (Archer, Aug. 1.)

Brown patch (Rhizoctonia sp.) on golf turf. "Identification by Dr. C. R. Orton. Specimen from Kennebunk Beach, first on record for Maine." (Folsom, Aug. 1.)

OAK ANTHRACNOSE (GNOMONIA VENETA)

Reports of damage caused by this disease have been received this year from a number of states.

Wisconsin: The "so-called" oak blight is very prevalent in southern Wisconsin. There is associated with the fungus on the leaves a large number of leaf hoppers which are

often of primary importance. In other cases the oak failure seems due to root injury; cause not determined. Here is a big problem that needs investigation. (R. E. Vaughan, July 1.)

Iowa: Continued reports show that this disease is quite severe in this state on white oak. Infection has also been found on black oak. In Iowa City the trouble has been so severe and extensive that local organizations have appealed for assistance in combating the trouble. Ordinarily when the first crop of leaves have been blighted they are replaced by second growth. This year, however, it has been observed that in many cases the entire tree has been covered by second growth, and that this in turn fell prey to infection, and that in some cases even third growth has become infected. Such a condition coupled with severe drouth will no doubt result in death of many large trees. (W. A. Archer, Aug. 1.)

REPORTS ON SOME OTHER DISEASES OF TREES

Red oak twig blight (Sphaeropsis malorum). "Very general throughout the State wherever oaks grow. Around the Twin Cities it has been observed in epidemic form on the red oaks. It has not been found on the white oaks yet." (Sect. Pl. Path., Aug. 1). Specimen received.

Horse chestnut leaf blotch (Guignardia aesculi). "General throughout Ohio." (E. W. Mendenhall, Aug. 3.) Specimen received.

Black spot of elm (Gnomonia ulmea). "Quite bad in nurseries in southwestern Ohio." (Mendenhall, Aug. 3). Specimen received.

Peridermium cerebrum on Pinus banksiana in Wisconsin. "Specimen of gall on jack pine has been received from Lincoln County." (Vaughan, Aug. 1).

Red cedar nursery blight (Phomopsis juniperovora) in Iowa. "In addition to the earlier reports coming from different parts of the State it is now found that the disease has caused a 40 per cent loss in nurseries at Shenandoah." (Archer, Aug. 1).

DISEASES OF ORNAMENTALS

Aster diseases in Wisconsin. "Fusarium wilt present in many gardens. Varieties show some differences in susceptibility. Resistant selections at Wisconsin show great promise. Yellows is observed in many gardens in Dane, Milwaukee, Winnebago, and Washington Counties. It is probably widely distributed." (Vaughan, Aug. 1).

Crepe myrtle powdery mildew (Uncinula australiana). "Early in June a specimen of this disease was received from the county agent of Greenville County, adding that county to the known range in South Carolina and supporting the idea that the fungus is widespread in the State." (Ludwig, Aug. 1.)

Chrysanthemum dodder (Cuscuta sp.). "Dodder was found on chrysanthemums in a greenhouse in Spokane, Washington. It was not flowering so I was unable to determine the species. This is the first occurrence that we have had of it under greenhouse conditions." (Heald, Aug. 1).

Stem and leaf rot and blight of peony in Maine. "Peony shoots, blackened both above and below and throughout, including the leaves, yielded copious fruiting growth of Botrytis upon being put into a damp chamber, but platings from the stem gave only Phytophthora. (See Pl. Dis. Reptr. Supl. 37, p. 402, for similar association reported from Connecticut. See Science 54: 170-171 for description.)" (Folsom, July 1). Cultures received.

Nectria canker (N. rousselliana) of box. Specimen collected by W. O. Hollister, Long Island, New York, Aug. 1.